

Date: Wed, 2 Mar 94 04:30:45 PST  
From: Ham-Space Mailing List and Newsgroup <ham-space@ucsd.edu>  
Errors-To: Ham-Space-Errors@UCSD.Edu  
Reply-To: Ham-Space@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Space Digest V94 #45  
To: Ham-Space

Ham-Space Digest                      Wed, 2 Mar 94                      Volume 94 : Issue    45

Today's Topics:

        GPS information (2 msgs)  
        Portable Oscar 13 Station?  
        Satellite FAQ answers (long)

Send Replies or notes for publication to: <Ham-Space@UCSD.Edu>  
Send subscription requests to: <Ham-Space-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Space Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-space".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.  
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Date: 28 Feb 1994 20:18:08 GMT  
From: unix.sri.com!headwall.Stanford.EDU!beale@hplabs.hp.com  
Subject: GPS information  
To: ham-space@ucsd.edu

Keith: (sorry, email to you bounced)

Concerning GPS: not what you want to hear perhaps, but I suspect that a  
nearly-finished GPS receiver module is the cheapest way to go. Now that  
the radio front-end has been pretty highly-integrated by high volume  
manufacturers, do-it yourself GHz spread-spectrum receivers don't make  
so much sense.

Do you get QEX (the ARRL Experimenter's Exchange, available from ARRL) ?  
If not, you probably should! The February 1994 issue has: "Interfacing  
GPS or LORAN Devices to Packet Radio" on p. 9-14. They discuss the  
Magellan OEM 5000 board (12V at 250 mA, 3.5x7 inch circuit board)  
which gives you RS-232 output of LAT/LON, altitude, and time in a  
standard (NMEA) format. It was \$445 and needs an external antenna  
(\$60 passive, \$130 active). They say that Magellan will be coming

out with a smaller GPS card for \$295 in May, with binary output rather than formatted ASCII.

Trimble Navigation (Sunnyvale, CA) also makes some OEM GPS modules, although I am only aware of packaged units for use in cars/trucks, and I haven't checked on the pricing.

I believe that a GPS receiver is a challenging project even for an expert in both microwave and digital circuits, with access to a lot of test equipment and a rather large supply of free time. If your time is even differentially more valuable than exactly zero, I think buying is the way to go!

Best,  
John Beale  
n8juf

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Date: 28 Feb 1994 22:26:06 GMT  
From: pa.dec.com!nntpd.lkg.dec.com!nntpd.lkg.dec.com!waf@decwrl.dec.com  
Subject: GPS information  
To: ham-space@ucsd.edu

Keith,

My E-mail bounced as well. E-mail or post a good address if you want a long message covering where to look for handheld units whose prices I don't think that you can beat with straight home brew. They are probably more expensive than you could get away with using the boards that John suggests, but as finished rugged units including display, antenna, batteries and charger, they may still have appeal.

The other thing covered that makes the message longer than I want to post is a copy of an old reply to another poster in which I try to remember enough about how GPS works in detail, with the object of convincing the reader that there are better home brew projects upon which to spend one's time. It could serve to try to convince you that waiting for the \$295 Magellan board is the way to go.

Bill Freeman, KE1G, waf@zk3.dec.com

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Date: Mon, 28 Feb 1994 16:37:23 GMT  
From: ihnp4.ucsd.edu!swrinde!gatech!wa4mei.ping.com!ke4zv!gary@network.ucsd.edu  
Subject: Portable Oscar 13 Station?  
To: ham-space@ucsd.edu

In article <1994Feb27.212556.8284@arrl.org> zlau@arrl.org (Zack Lau (KH6CP)) writes:

>

>I tried Mode S, 6 watts to a 5.5 ft boom 436 MHz  
>yagi and a 2 ft. dish with a 2.4 GHz feed, but  
>only made 6 contacts in 3 hours (1 hr/day).

>

>Problem was, several stations had trouble hearing  
>my signal, even though it sounded fine to me.  
>I could sometimes hear myself clearly running  
>6 dB less power (1.5 watts).

Hey, that's good. The problem's not on your end. The problem is that most mode S stations are deaf, most mode B too if the truth be known.

>Should I try Mode B or work on my 436 antenna?

>

>I prefer small antennas I can stick in my car  
>without taking apart. Makes a big difference  
>when the weather changes for the worse....

The sad fact is that most Oscar users will have trouble copying you if your signal is much weaker than the beacon. If you can muster about 100 watts ERP uplink on 436, a lot more stations will respond to you. Also there's a lot more activity on mode B, and some of those stations have impressive receiving setups (ZRO 8 or better) and will have little trouble copying your low power uplink.

I had a nice long SSB chat with a group uplinking to Oscar 10 from Antarctica who were using only 5 watts and a short beam. (This was before A010 went sour.) They'd been calling for days with no response. After I built a pileup for them, they made a bunch of contacts. Of course I was using four stacked 424B Long Boomers with a good mast mounted preamp at the time and they came booming in on my receiver. Most other stations had been tuning right past them without noticing they were there.

When I operate portable, I use a short helix for uplink, and a 100 watt Mirage amp. I can make enough uplink power to be heard clearly by most stations, and can turn down the wick with the better stations. The problem on mode B is receiving with a small antenna. It limits you to

working only the stronger stations. Your mode S receive  
setup sounds really hot. I can't claim that kind of  
performance, and I have a 4 foot dish at the home  
station. (I obviously need a better LNA.)

Gary

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Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

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Date: 28 Feb 1994 20:34:03 -0500  
From: ihnp4.ucsd.edu!swrinde!cs.utexas.edu!howland.reston.ans.net!news.ans.net!  
hp81.prod.aol.net!rmg01.prod.aol.net!not-for-mail@network.ucsd.edu  
Subject: Satellite FAQ answers (long)  
To: ham-space@ucsd.edu

Excellent, excellent, excellent! A great asset to the satellite shy users out  
there!

73 for now.... c u on the shortwaves  
Terry Stader - KA8SCP  
America Online Ham Radio Club Host  
Internet: tstader@aol.com (files <28K) or  
p00489@psilink.com ( files >28K)  
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ka8scp@ka8scp.ampr.org [44.56.4.82] Mac  
ka8scp-1@ka8scp-1.ampr.org [44.56.4.120] DOS Clone  
(they're BOTH pc's!)

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End of Ham-Space Digest V94 #45

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